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C O N F I D E N T I A L PANAMA 001898

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FOR STATE WHA/CEN - TELLO
FOR EMB SAN JOSE: OFDA - T. CALLAGHAN

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TAGS: [SENV](#) [AMER](#) [EWWT](#) [ELTN](#) [TPHY](#) [PM](#)
SUBJECT: POTENTIAL SEISMIC RISKS MAY THREATEN PANAMA CANAL
AND CENTRAL PANAMA

Classified By: Ambassador William A. Eaton by reasons 1.4 (b)
and (d)

11. (C) SUMMARY. The historical view that Panama does not experience earthquakes was wrong, geological experts employed by the Panama Canal Authority (ACP) told EmbOffs. These experts said emerging geologic research suggests that Central Panama -- including the Panama Canal and Panama City area -- may face much greater seismic risks than previously believed. They believed a major earthquake (magnitude 7.0 or greater) could hit the Panama Canal and Panama City area at any time. They fear this could cause a failure of the existing canal and significant destruction in Panama City. They said the ACP worked to address the findings responsibly. The information could be made public in January 2008 to bidders on the design/build contract for the canal's new set of locks and water recycling basins. This new information could significantly increase the project's costs. If true, the new seismic findings could affect U.S. interests regarding safety of American citizens in Panama, disaster relief planning, and our economic and security interests in the canal. Disclosure of significant seismic risks in Central Panama could deal a huge blow to the two main motors of Panama's economy: the Panama Canal and the country's booming real estate/construction sector. This disclosure could also undermine the ACP's and GOP's credibility and vindicate those who feared cost overruns on the canal expansion project. Post requests that the U.S. Geological Survey engage with these experts to assess the findings and advise Post along with other USG agencies as to the risks involved. END SUMMARY.

Central Panama's Seismic Risks May Be Worse than Believed

12. (C) On November 21, Jonathan Harris, a geologist and Vice President of CH2M Hill, the canal expansion project's project manager, told Econoffs that emerging geologic research suggested that Central Panama faced much greater seismic risks than previously believed. He said the area is

vulnerable to earthquakes of magnitude 7.0 or greater and up to 8.0. He said recent geological studies by California-based Earth Consultants International, Inc. (ECI) confirmed the existence of various active earthquake faults within the Panama Canal area. Harris noted that CH2M Hill prohibits any of its employees working in Panama from living above the first floor in any building.

13. (C) On December 14, Eldon Gath, President of ECI, continued Harris' revelations during a briefing for the Ambassador and select Country Team members on ECI's work on Panama's geology and the associated earthquake risks. He said that the historical view that Central Panama does not experience earthquakes was wrong. Gath explained that there were three major faults in the Panama Canal area: the Gatun Fault that ran within five kilometers of the Gatun Dam near the Atlantic entrance to the canal, the Pedro Miguel Fault that ran north-south between the Pedro Miguel and Miraflores locks, and the Limon Fault that ran through central Panama. Gath was perplexed that prior geological studies had missed what he maintains was obvious evidence of active faults. He added that a fourth fault, which was previously believed to be inactive, actually shows evidence of being active. This fault traverses the location of the new set of Pacific entrance locks and is just west of Miraflores Locks.

14. (C) Gath said the most recent geological evidence puts Central Panama at the same level of earthquake risk as San Francisco, California. He also said that the Panama City area has experienced three earthquakes of a magnitude 7.0 or greater in the last 300 hundred years. An 1882 earthquake in Central Panama destroyed buildings in Panama City and sank the Panama railroad bed by approximately ten feet. Harris and Gath pointed to the likelihood of earthquake of magnitude 7.0 or greater in the canal area within the next 50 years. Gath added that the fault had been accumulating stress for almost 400 years at a rate of seven millimeters per year, and is now at approximately 2.8 meters of accumulated stress. He said he believes that the 1621 earthquake which destroyed Panama City occurred when the fault had an accumulated stress of three meters. He maintained that three meters of accumulated stress was the maximum stress the fault could withstand before a major earthquake would occur.

Potential Impacts

15. (C) The potential impact on Panama City will be catastrophic when the earthquake hits, said Gath, adding that when the stress in the Pedro Miguel fault reached its maximum, the resultant earthquake could destroy the lock doors at the Miraflores and Pedro Miguel Locks, cause the Miraflores Dam to fail, and result in landslides along the Culebra Cut. Harris and Gath both said Panama City's high-rises could topple as a result of construction that was not designed for large earthquakes. Gath also said small houses in poor communities between Panama City and Colon, typically built on weak pillars, could collapse.

16. (C) Gath doubted that the aging, poorly maintained Bridge of the Americas spanning the Pacific entrance of the Panama Canal would survive such a quake. But he was uncertain whether the relatively new Centenary Bridge would also collapse. He maintained that the Bridge of the Americas was not designed to withstand any significant ground movement. Gath added that ACP and private sector engineers had said they did not know why the bridge has not already collapsed given its poor, rusted condition. In 2006, newspapers reported that the Bridge of the Americas was in need of 30 critical repairs. To date, virtually none of those repairs are believed to have been made. Gath also said that it was not inconceivable that an earthquake along the Pedro Miguel Fault could trigger an earthquake along the Gatun Fault, thereby damaging Gatun Dam.

¶17. (C) Gath said the existing locks were not designed to withstand any meaningful ground movement. He referred to the Canal's existing dams as massive but brittle when it came to surviving an earthquake. He said it was possible to reinforce the three existing dams and 50 earthen dams surrounding Lake Gatun to withstand a serious earthquake. The issue would be cost and the availability of materials, principally clay to reinforce the dams. However, he doubted the existing lock doors and chambers could be so reinforced.

¶18. (C) Any attempt to repair the locks after an earthquake could be hindered by the destruction of most of Panama City,s infrastructure and buildings. As of now, the GOP would not likely have the requisite personnel, material, and equipment to attend adequately and simultaneously to the needs of its citizenry and the repair of the canal.

¶19. (C) Gath said that the ACP,s current design for new locks (with rolling gates) was problematic and potentially unfeasible in light of the potential earthquake risk. He said the rolling gates concept was much more difficult to engineer to withstand an earthquake than the swinging lock doors currently used. According to Gath, ACP engineers were re-examining the feasibility of the proposed new lock design.

¶10. (C) Harris and Gath separately speculated that designing the new locks to withstand a 7.0-7.2 magnitude earthquake could double the cost of constructing the new locks and water recycling basins. As reported septel, the ACP,s current budgeted amount for the new locks of \$3.726 billion was already in question owing to the U.S. dollar's slide and local inflation rates that were now running more than three times the annual rate that the ACP had factored into its original cost estimates. In prior conversations with bankers at New York-based investment banks, EconOff was told that the ACP could easily service up to \$7 to \$8 billion of long term debt. The ACP currently has no long term debt.

¶11. (C) Gath stressed that the ACP had thus far handled the emerging &bad news8 about the faults in a highly professional and responsible manner. He pointed out that, unlike some of his former clients in the U.S. that had ignored inconvenient geologic reports, the ACP had been exemplary in accepting the scientists, conclusions and working to analyze the impact of the information. However, the ACP - fully occupied with major licitation processes - has yet to complete threat analyses, damage assessment surveys, or similar reports or studies. Gath reported that upon hearing of ECI,s findings, ACP Administrator Alberto Aleman Zubieta immediately advised President Martin Torrijos and the ACP,s Advisory Board. Gath added that Aleman said he was more concerned about the earthquake damage to Panama City than the Panama Canal, quoting Aleman as saying, &The canal is a structure. The city is people.8

Origins of the New Geologic Conclusions

¶12. (C) Gath posited that the lack of major earthquakes in Panama since 1879 has fostered the mistaken belief that Central Panama was not seismically active. In 2005, ECI finalized a report for the ACP that showed the Gatun Fault was active. The ACP then hired a new geological firm to review the work of ECI that not only confirmed the work but said the risk was greater. On September 24-29, the Southern California Section of the American Environmentl and Engineering Geology (AEG) held a symposium on the earthquake risks and seismic activity in Panama. ACP officials attended the symposium. Abstracts of the presentations can be found at www.aegs.com/2007-Meeting/pdf/abstracts.pdf.

¶13. (C) As a result of ECI,s initial work and the subsequent reviews, the ACP hired three seismic experts and invited ECI, an expert from the Western region of the U.S.

Geologic Survey (USGS), and other experts to Panama during the week of December 10 to perform field work and put these emerging findings to further peer review. Gath said that at the end of the week, all participants agreed on the seriousness of the earthquake risks in Central Panama. He said the only point of debate concerned uncertainties regarding the exact dates of the prior earthquakes. The geologists' report was scheduled to be finalized on December 16 and delivered to the ACP on December 17.

¶14. (C) Gath expects the ACP would deliver the report and seismic studies in January 2008 to the bidders on the new design/build contract in order for them to prepare adequately their bids. He said ECI would publish the results of its findings in scientific journals and other geologists would do the same. Gath said he had already fended off inquiries from Science magazine and a science reporter for an Orange County, California newspaper regarding new findings on Panama's seismic hazards.⁸ He said that the ACP knew of these intentions to publish and has said the ACP had no problems with the geologists publishing their findings.

¶15. (C) Gath said that Bechtel International, which leads the sole U.S.-led consortia bidding on the design/build contract, was present at the September AEG symposium sessions on the earthquake risks to Panama and the Panama Canal. No other consortia members were present at the conference. Harris told EconOffs that he was concerned that some consortia might choose not to bid after they fully analyze the earthquake risks due to the cost, risk, and engineering challenges posed.

Potential Implications for U.S. Interests

¶16. (C) The emerging scientific understanding of Central Panama's seismic risks potentially has both direct and indirect effects on U.S. interests, namely:

- the safety and security of USG personnel at post and the growing number of U.S. citizens who reside and travel in Panama;
- inevitable calls for U.S. support for disaster relief, search and rescue assistance, and possibly recovery/reconstruction, both at the Canal and elsewhere in affected areas;
- potential impacts to U.S. security and commercial interests resulting from any long-term stoppage or extensive disruptions in transits through the Panama Canal, as about two-thirds of the Canal's 14,000 annual transits are destined to/from the U.S.; and,
- potential recriminations directed at the U.S. for alleged shortcomings in prior geologic research and/or Panama Canal design/construction.

Action Request for USGS

¶17. (SBU) Post requests that the U.S. Geological Survey engage with these experts to assess the findings, and advise Post along with other USG agencies, as to the risks involved. Post will follow up accordingly with key GOP and ACP officials to ensure that any conclusive new findings on seismic risks are divulged publicly and responsibly. Post will also take stock of its earthquake preparedness and, in coordination with the GOP, ensure that the American citizens in Panama will be duly informed of Panama's seismic risks.

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